

Translation

PATENT COOPERATION TREATY

PCT/EP2003/009119



PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference WO 38238	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP2003/009119	International filing date (day/month/year) 18 August 2003 (18.08.2003)	Priority date (day/month/year) 19 August 2002 (19.08.2002)
International Patent Classification (IPC) or national classification and IPC C08G 18/08		
Applicant GAIA AKKUMULATORENWERKE GMBH		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☒ Certain observations on the international application

Date of submission of the demand 05 February 2004 (05.02.2004)	Date of completion of this report 13 December 2004 (13.12.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/EP2003/009119

## I. Basis of the report

1. With regard to the **elements** of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
pages 1-11, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
pages 1-22, as originally filed  
pages \_\_\_\_\_, as amended (together with any statement under Article 19  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
pages \_\_\_\_\_, as originally filed  
pages \_\_\_\_\_, filed with the demand  
pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

 International application No.  
 PCT/EP 03/09119

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

## 1. Statement

Novelty (N)	Claims		YES
	Claims	1-22	NO
Inventive step (IS)	Claims		YES
	Claims	1-22	NO
Industrial applicability (IA)	Claims	1-22	YES
	Claims		NO

## 2. Citations and explanations

**1. Certain observations on, and defects in, the international application**

- 1.1. Claim 1 is unclear (PCT Article 6), because the procedure is chosen in such a way that the two active substances react with each other to form a porous structure; the claim simply attempts to define the subject matter in terms of the result to be achieved, but in so doing merely states the problem to be solved. The feature which appears to be necessary for achieving this result is possibly the characterization of the aqueous dispersion of the polymer binder.
- 1.2. In addition, claim 1 is too broadly, and hence inadequately, defined, and therefore novelty cannot be established (see items 2. and 3.1.).
- 1.3. The observations in item 1.1. also apply to claim 6.
- 1.4. The common method steps of the production of the battery electrodes and of the separator as per claim 1 are simply the general steps for the production of a layer having a porous structure, an isocyanate together with an aqueous dispersion of a polymer

binder producing the structure during extrusion. This is known in any case. Consequently, the subjects of claims 1 to 10 and 15 to 18 are not novel.

With the method as per claim 1, any kind of porous layer can be produced, in particular both a battery electrode and a separator, although the subsequent requirements might be different. This actually results in the lack of unity of invention under PCT Rule 13.1. The method must therefore be adapted to the electrodes or to the separator. This could also establish novelty.

**2. Disclosures:**

Reference is made to the following documents:

- D1: US-A-5 830 603 (HARADA AKIRA ET AL)  
3 November 1998
- D2: US-B-6 190 803 (NODA YOSHIKI ET AL)  
20 February 2001
- D3: GB-A-1 107 783 (POROUS PLASTICS LTD)  
27 March 1968
- D4: US-A-5 198 162 (PARK GEORGE B ET AL)  
30 March 1993
- D5: US-A-5 391 610 (LADANG MICHEL ET AL)  
21 February 1995.

- 2.1. Document D1 discloses a method for the production of battery separators, in which a composition containing isocyanates and an aqueous dispersion of a polymer binder is extruded to form a porous structure  
(column 7, line 58 to column 8, line 22; examples 1, 20 to 25).

- 2.2. Document D2 discloses a method for the production of a battery electrode, in which a composition containing isocyanates and an aqueous dispersion of a polymer binder is extruded to form a porous structure  
(column 8, line 47 to column 9, line 4).
- 2.3. Document D3 discloses a method for the production of battery separators, in which a composition containing isocyanates and an aqueous dispersion of a polymer binder is extruded to form a porous structure  
(claims 1, 7-11; 18, 23-25, 28).
- 2.4. Document D4 discloses a method for the production of **porous layers**, in which a composition containing isocyanates and an aqueous dispersion of a polymer binder is extruded to form a porous structure  
(column 11, lines 37 to 55; example 1).
- 2.5. Document D5 discloses a method for the production of **porous layers**, in which a composition containing isocyanates and an aqueous dispersion of a polymer binder (PP, PE, polystyrene) is extruded to form a porous structure (column 9, lines 15 to 63; examples 1 and 2).

### 3. **Novelty:**

- 3.1. The subject matter of claims 1 to 10 and 15 to 18 is not novel, because it is simply a method for producing a porous layer (which can, but need not, be used for the production of battery electrodes), in which an isocyanate is combined with an aqueous dispersion of a polymer binder, and the composition produces the porous structure during extrusion, which is already known in the prior art (see D4, D5).

3.2. The subject matter of claim 1 is not novel within the meaning of PCT Article 33(1) and (2), having regard to D1, D2 and D3.

3.3. Other dependent claims and claims 19 to 22 are not novel either.

4. *Inventive step:*

For a person skilled in the art, the uses of the methods as in D3 to D5 are ideal for the production of porous battery electrodes. Consequently, the claims which relate especially to the production of battery electrodes (that is, the remaining claims, 11 to 14 and 19 to 22) cannot be considered inventive.

At present, no part of the application would appear to form a suitable basis for a new, allowable claim.